GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Information Systems in Manufacturing, PG_00066752		
Field of study	Mechanical and Medical Engineering, Mechanical Engineering, Transport and Logistics		
Date of commencement of studies	February 2026	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Ecoengineering and Combustion Engines -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Kropiwnicki	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	30	0.0	0.0	30

Subject objectives

The course will provide the students with advanced knowledge in production manufacturing systems, which every company implements today, and they will understand modern block chain technology.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K82] is equipped to participate actively in lectures, seminars and laboratory classes conducted in foreign language	Student jest przygotowany do aktywnego uczestnictwa w wykładach w języku obcym z zakresu systemów produkcyjnych i nowoczesnych technologii blockchain.	[SK2] Assessment of progress of work
[K7_U82] is able to proficiently obtain and process information related to field of study and academic environment in foreign language at B2+ level of the Common European Framework of Reference for Languages (CEFR)	has the ability to efficiently acquire and process information in a foreign language in the field of information systems in manufacturing	[SU2] Assessment of ability to analyse information
[K7_W12] identifies and interprets the main developmental trends and significant new achievements in the field of engineering and technical sciences and disciplines relevant to the course of study	identifies and interprets the main development trends and the most important new achievements in the field of information systems in manufacturing	[SW1] Assessment of factual knowledge
[K7_U14] integrates information obtained from literature and other properly selected sources, including those in a foreign language, creatively interpreting and critically evaluating them, and drawing conclusions	integrates information obtained from literature and other carefully selected sources in the field of information systems in manufacturing	[SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>Course content – lecture

Information Systems: Production systems,Technological processes, Software framework; Business Information Systems: Business functions and processes, Basic Concepts of the Information System, The position of the information system in the decision-making process, Organizational aspects of information systems, Basic architectures and types of business information systems, Types of information systems, ERP, CRM, Using electronic business technologies - business information systems on the Internet, Knowledge management; ERP (Enterprise Resource Planning) Systems: Theoretical teaching, Introduction to enterprise-level systems, System integration, ERP system architecture, ERP system implementation strategies, Software and vendor selection, Post-implementation work, Organizational changes and process reengineering, Supply chain management, Customer relationship managemen; Advanced Manufacturing and Block Chain technology: Introduction to Blockchain Technology, Cryptographic Foundations, Blockchain Platforms and Ecosystems, Smart Contracts and Decentralized Applications, Blockchain Development Tools and Frameworks, Consensus Mechanisms and Protocols and Security, Use Cases and industry applications.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Test</td><td>55.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Production and Operations Management Systems By Sushil Gupta, Martin Starr, ISBN 9781466507333, https://www.amazon.com/Production-Operations-Management-Systems-Sushil/dp/1466507330</td></tr>
<tr><td>Supplementary literature</td><td>Production and Operations Management Systems By Sushil Gupta, Martin Starr, ISBN 9781466507333, https://www.amazon.com/Production-Operations-Management-Systems-Sushil/dp/1466507330</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>What is Master Production Scheduling plan?

Differences between ERP and MRP systems?

Name the steps that are involved in the Blockchain project implementation.

What is the fork? What are some of the types of forking?</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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